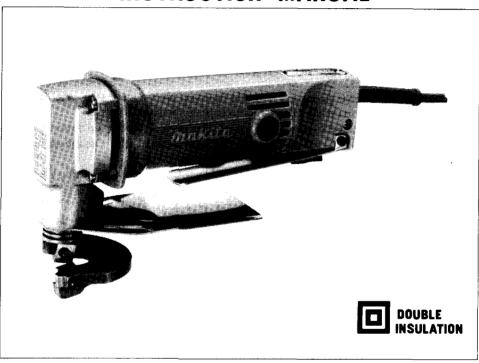




# Shear MODEL JS1600

# INSTRUCTION MANUAL



## **Specifications**

Max. cutting capacities		Min. cutting	Strokes	Continuous	Overall	Net	Power
Mild steel	Stainless	radius	per minute	rating (Input)	length	weight	supply cord
1.6 mm (1/16")	1.2 mm (3/64")	30 mm (1-1/4'')	4,000	300 W	230 mm (9-1/8'')	1.7 kg (3.7 lbs)	2 m (6.6 ft.)

Manufacturer reserves the right to change specifications of parts and accessories without notice.

<sup>\*</sup>Note: Specifications of parts and accessories may vary from country to country.

#### IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

#### READ ALL INSTRUCTIONS.

- 1. KEEP WORK AREA CLEAN. Cluttered areas and benches invite injuries.
- CONSIDER WORK AREA ENVIRONMENT. Don't use power tools in damp or wet locations. Keep work area well lit. Don't expose power tools to rain. Don't use tool in presence of flammable liquids or gases.
- 3. KEEP CHILDREN AWAY. All visitors should be kept away from work area. Don't let visitors contact tool or extension cord.
- STORE IDLE TOOLS. When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
- 5. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was intended.
- USE RIGHT TOOL. Don't force small tool or attachment to do the job of a heavyduty tool. Don't use tool for purpose not intended.
- 7. DRESS PROPERLY. Don't wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
- 8. USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty.
- DON'T ABUSE CORD. Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- 10. SECURE WORK. Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
- 11. DON'T OVERREACH. Keep proper footing and balance at all times.
- 12. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired by authorized service facility. Keep handles dry, clean, and free from oil and grease.
- 13. DISCONNECT TOOLS. When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
- 14. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 15. AVOID UNINTENTIONAL STARTING. Don't carry plugged-in tool with finger on switch. Be sure switch is OFF when plugging in.
- 16. OUTDOOR USE EXTENSION CORDS. When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
- 17. STAY ALERT. Watch what you are doing, use common sense. Don't operate tool when you are tired.
- 18. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or

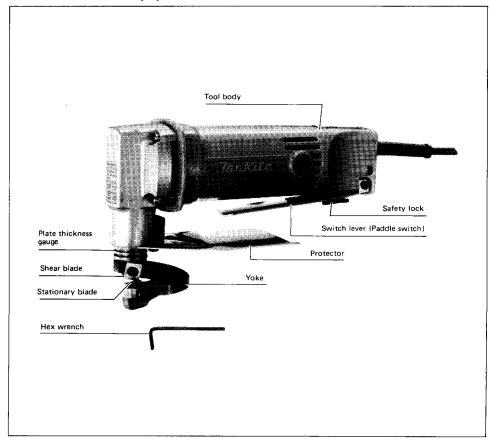
replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Don't use tool if switch does not turn it on and off.

- 19. GUARD AGAINST ELECTRIC SHOCK. Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
- 20. REPLACEMENT PARTS. When servicing, use only identical replacement parts.

#### SAVE THESE INSTRUCTIONS.

VOLTAGE WARNING: Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that specified for the tool can result in SERIOUS INJURY to the user — as well as damage to the tool. If in doubt, DO NOT PLUG IN THE TOOL. Using a power source with voltage less than the nameplate rating is harmful to the motor.

**Shear & Standard Equipment** 



#### How to use

#### **Switch Operation**

 First, turn the safety lock to the FREE position. Then squeeze the switch lever (paddle switch) to put on the tool; release it to put it off.

Note: The switch lever (paddle switch) does not work with the safety lock in the LOCK position. Do not try to work the switch lever (paddle switch) with the safety lock on. Not using the tool, put on the safety lock.

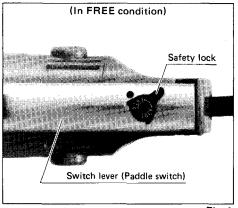


Fig. 2

(In LOCK condition)

Fig. 1

#### Permissible Shearing Thickness

 The groove on the yoke serves as a thickness gauge for shearing mild or stainless steel plate. If the material fits within the groove, it is shearable.

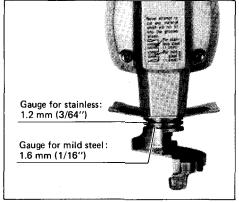


Fig. 3

<ul> <li>The thickness of materials to be sheared</li> </ul>
depends upon the type (strength) of the
material. The maximum shearing thick-
ness is indicated in the table on the right
in terms of various materials. Attempting
to shear materials thicker than indicated
will result in tool breakdown and/or pos-
sible injury. Keep within the thickness
shown at right.

Material	Tensile strength (kg/mm²)	Max. cutting thickness (mm)		
Mild steel (A)	40	1.6 (1/16")		
Hard steel (B)	60	1.2 (3/64")		
Stainless steel	60	1.2 (3/64")		
Aluminum plate	25	2.0 (5/64'')		

◆ See listing below for standards in various countries corresponding to (A) and (B) above.

	ISO	ASTM	AISI	BS	DIN	NF	JIS
(A)	3574 - 76	A109-72	1012	1449 Part 1-72	1624 - 77	A36-401-80	SPC
(B)	R683	A576	1055	070M55	CK55	XC55	S55C

#### Holding (Fixturing) of Materials

 The materials for cutting should be fastened to the work bench by means of workholders.

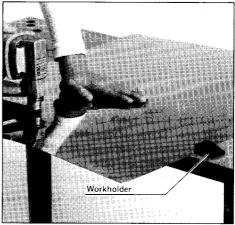


Fig. 4

#### **Shearing Method**

• Keep the shear moving parallel with the material.

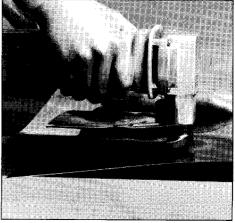


Fig. 5

#### **Blade Inspection**

- Before using the tool check the blades for wear. Dull, worn blades will result in poor shearing action, and the service life of the tool will be shortened. Replace worn blades as follows.
  - Blades may be used in 8 different locations on the front and back. When exchanging blades, always put in a fresh set.

#### **Changing Blade Position**

 Use the hex wrench provided to remove the hex socket hd. bolt holding the shear blade in place.

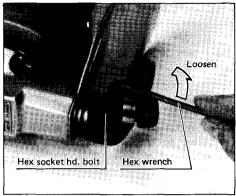


Fig. 6

 Turn the shear blade and replace with a new one. Some power shears have one or more washers between the shear blade and the holder. Be sure to use the same number of washers when reassembling.

Note: No washers are used for the stationary blade.

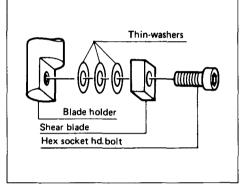


Fig. 7

• To secure the shear blade, tighten the hex socket hd. bolt with the hex wrench provided. Keep pressure on the shear blade while tightening it. After fastening the blade, check to be sure that there is no clearance between the shear blade and blade holder bevelled surface.

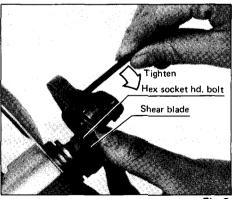


Fig. 8

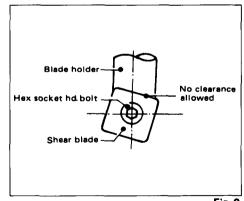
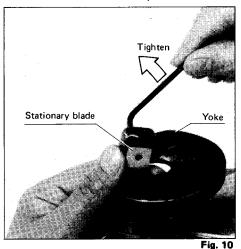


Fig. 9

- When installing the stationary blade onto the yoke, the blade should be pressed against the yoke so as to be contacting the bevelled yoke installing portions (A & B) and the tip of the hex socket hd. hold-down screw while you tighten the bolt with the hex wrench. There must be no clearance between A, B and C during the installation (see below).
  - The hex socket hd. hold-down screw shown in the diagram on the right is factoryassembled. Do not tamper with it.



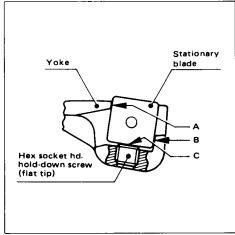
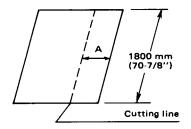


Fig. 11

#### Maximum Shearing Width

• Stay within the specified maximum cutting width (A): Case of length 1,800 mm (7-7/8").



		Unit: mm (inch)
Mild steel	t = 1.6 (1/16'')	t = under 1.2 (3/64'')
Max. shearing width (A)	100 (3-15/16'')	No limit
Steel plate (Stainless)	t = 1.2 (3/64")	t = under 1.0 (0.04")
Max. shearing width (A)	80 (3-1/8'')	No limit

#### Maintenance

#### **Carbon Brushes**

 Replace carbon brushes when they wear down to about 3 mm (1/8") or sparking will occur. Both brushes should be changed at the same time.

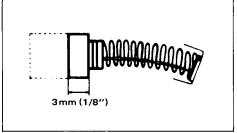
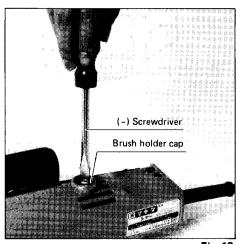


Fig. 12

• To replace the carbon brushes, use a minus (-) head screwdriver to remove the brush holder cap.



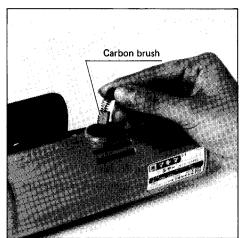


Fig. 13

Fig. 14

#### **Optional Accessories**

CAUTION: The accessories specified in this manual are recommended for use with your Makita Shear. The use of any other accessory might be hazardous.

#### Blades

(two per set of brister package) Part No. 191384-8



#### Hex wrench

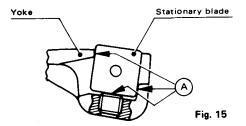
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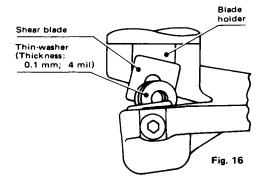


# PROPER BLADE CLEARANCE ADJUSTMENT

The correct blade clearance is 0.1 - 0.2 mm (4 mil - 8 mil)

- First, fasten carefully and securely the stationary blade at position A (as seen on the right), so that there is no clearance.
- 2. Set the shear blade on the blade installing portion of the blade holder.
- 3. Fit as many of the washers as possible between the blades.
- Remove one of the above washers and insert it between the blade holder and shear blade. Then fasten securely with the hex. screw.





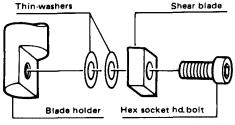
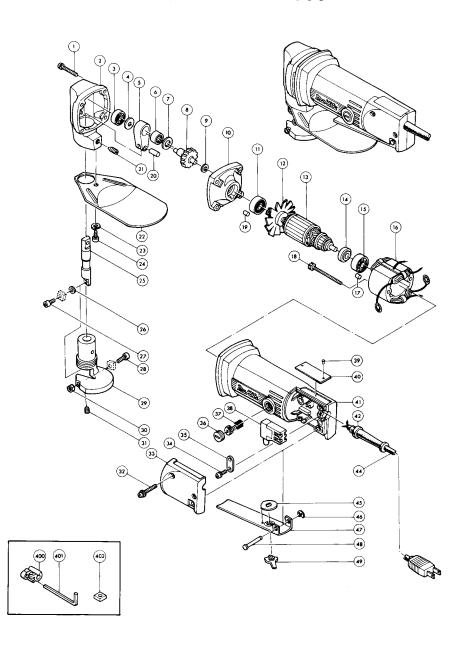


Fig. 17

## SHEAR Model JS1600



NO.	NO. USED	DESCRIPTION	ITEM NO.	NO. USED	DESCRIPTION	
MAC	MACHINE MACHINE					
1	4	P. H. Screw M4x30 (With Washer)	28	1 1	H. S. H. Bolt M4x20	
2	1	Gear Housing (With Needle Bearing 609)	29	1 1	Yoke	
3	1	Ball Bearing 627	30	1	H, Nut M4-7	
4	1	F. Washer 7	31	1	H. S. S. Screw M6x6	
5	1	Rod	32	2	P. H. Screw M4x30 (With Washer)	
6	1	Needle Bearing 1012	33	1 1	Switch Cover	
7	1	F. Washer 10	34	2	P. H. Screw M4x18 (With Washer)	
8	1	Crank Shaft (With Helical Gear 39)	35	1	Strain Relief	
9	1	F. Washer 6	36	2	Brush Holder Cap	
10	1	Gear Housing Cover	37	2	Carbon Brush CB-53	
11	1	Ball Bearing 608LB	38	1 1	Switch	
12	1	Fan 58	39	2	Rivet 0-5	
13	1	ARMATURE ASSEMBLY	40	1	Name Plate	
		(Assembled Items 11, 12, 13, 14 & 15)	41	1	Motor Housing (With Brush Holder x 2)	
14	1	Insulation Washer	42	1	Cord Guard	
15 16	1	Ball Bearing 627LB FIELD ASSEMBLY (With Garter Spring x 2)	44	1	CORD ASSEMBLY (Assembled Cord, Plug & Cord Guard)	
17	1 1	Rubber Pin 4	45	1	Leaf Spring	
18	2	H. Bolt M4x55 (With Washer)	46	1 1	Stop Ring E –3	
19	1	Rubber Pin 4	"	'	SWITCH LEVER ASSEMBLY	
20		Pin 6	1	i i	(Assembled Items 45, 47 & 49)	
21	1	S. Screw M8×16	47	1	Switch Lever	
22	1	Protector	48	1	Pin 4	
23	1	S. Washer 5	49	1 1	Safety Lock	
24	1	H. S. H. Bolt M5x10	ACCE	ACCESSORIES		
25	1	Blade Holder	400	1 1	Wrench Holder 3-7	
26	0 – 3	T. Washer 5	401	1	H. Wrench 3	
27	1	H. S. H. Bolt M4x10	402	2	Shear Blade	



### MAKITA LIMITED ONE YEAR WARRANTY

#### Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others:
- repairs are required because of normal wear and tear:
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

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